



Manitoba today is an open country and, as such, has all the difficulties of an open country to contend with—winds, hot and cold, drought, frost, hail, snow drifts, blizzards, lack of shade, scarcity of birds, lack

of wood, monotony of view, lack of moisture, streams, springs and wells. There is no one material thing that would effect such a great change in this province as trees. Indeed, it might be said that to turn our treeless prairies into a wooded country would revolutionize the province.

It would be very easy to tree Manitoba. It is not difficult now even on the bare prairie, with reasonable cultivation, to grow certain varieties of trees and to grow them quickly. There are other varieties of trees, and the most desirable ones, that require the shelter of the more rugged ones, but those who practise tree culture say that it is not only easy on the prairie but exceedingly pleasurable.

Two acres of plantation land on each quarter section, viz., 1 acre on the north limit and 1 acre on the west limit, would change Manitoba from an open country to a treed country. In order to grow the trees a strip of land one rod wide, that is 16 1/2 feet, should be summerfallowed the season before the trees are planted. This strip should be planted the next spring with four rows of trees four feet apart in the row, which would require 5,280 trees for the quarter section. The Department of the Interior will be delighted to furnish the trees and to advise as to the varieties which will be the best to grow in the different districts or on the particular farm in question. A number of varieties are available: poplar, willow, cottonwood, ash, elm, Manitoba maple, spruce, pine, balsam, tamarack, basswood. Besides these a number of admirable shrubs and fruit trees may be grown: elder, sumach, mountain ash, cherry, plum, crab apple, hawthorn, and others.

The cost of plantation is as follows:
Summerfallowing 2 acres \$ 16.00
Planting 2 acres 20.00
Cultivating 4 acres @ \$20 per acre 80.00

\$116.00

It is only necessary to have a beginning made. There is in this a golden opportunity for some progressive young Manitoban to write his name on the history of the province. When one man does it, his neighbor will follow suit, and in a short time the plantation habit will be established. There can be no question of the value of such plantations. I do not mean that a single plantation would be of any great value, except to the farm on which it is situated, but if trees were planted generally, there is no doubt of their great economic value, not to mention their beautifying effect on the landscape.

Beneficial Effects of Trees

The trees would stop the winds, both hot and cold. In summer the hot winds cause great damage to the crops in the open country. During 1916 the hot winds did much more damage than the rust. Indeed, I think it is generally admitted that the damage by rust was merely incidental to the damage done by the winds. Not only would the trees form a windbreak and prevent the steady onset of the hot, parched winds which we have so often now, but the trees would cool the air. In winter the severe winds, and particularly the blizzards would be put an end to. One of the greatest objections to winter life in Manitoba is the severity of the wind, that is, in the open districts. In the wooded parts of Manitoba the severity of the winter is much ameliorated by the absence of winds and blizzards. If the whole country were planted with wind breaks there would be an effective end put to winter wind storms. I might just remark at this point that very few farmers would stop at a shelter break of two acres on a quarter section. The value of the trees would prove so great that there would be substantial plantations on many farms.

Drought is greatly increased by the winds, both

By D. F. Stewart, Dunstan, Man.

In this very practical article Mr. Stewart deals with the possibilities of farm tree plantation in his home province. The lesson told is applicable to all three provinces. We should like to have from our readers their experiences in tree planting. Tell why and what you planted, the cost, the success or failure you have had and the practical value as well as satisfaction you have received from your investment.

in summer and in winter. The plowed fields suffer the most. Literally tons of moisture are carried away from the plowed ground by the winds of a few days in summer and the winds have nearly as much effect in drying the bare black soil in winter. Every farmer knows the difference between the quantity of moisture in ground that has been covered even lightly with snow during the winter and in ground that has been exposed to the winter wind. There are cases in this district where men in 1916 grew 25 bushels an acre of wheat of good grade in fields sheltered by timber belts, while unsheltered parts of the same fields produced seven or eight bushels of very low grade wheat. The damage was done by the hot winds of a few days, and there is no doubt that in the cases in point the heat of the winds was tempered in passing thru the trees. I have no authentic information as to the difference in temperature of wind after passing over bare ground in summer and after passing thru trees, but there is no occasion to prove the great difference to the farmer, his own face tells him the great variation in temperature as he passes the summerfallow and the wood lot. The wind passing over the growing grain crop is in temperature between that passing over the bare ground and thru the trees. In passing over the grain it is somewhat

driving in the shelter of the trees is a pleasure, while driving in the open, particularly in severe weather, is anything but a pleasure. With shelter belts around each farm our high winds would be reduced to a minimum and with the winds would disappear the snow drift as well as the soil-covered snow road beside the summerfallow. I quite appreciate the fact that in individual cases a single shelter belt might increase the drifting locally rather than lessen it, but with timber belts general over the country our winter roads would be very much better than they are now and not only driving for pleasure, but freighting, could be done easier and with more comfort than at the present time. One of the incentives to rush our grain to market in the fall of the year is the fact that winter teaming in the open is very expensive, not to mention the discomfort of it. The winter season is the proper season to market our grain. Much time is now devoted to hauling grain to market that should be devoted to cultivation of the soil, and one of the causes of this is the snowdrift and sand-covered road of winter.

The blizzard is a fearful thing to many people, but the blizzard is unknown in the timber country.

Becoming An Arid Country

Trees are a benefit and comfort not only to man but to the beasts and birds. In summer our domestic animals thrive much better when they have a shade to which they can go during the hottest part of the day. The birds also congregate where there are trees, and the birds are surely the farmers' friends. They destroy not only insects but weed seeds. Indeed, in this matter of weed seeds alone the shelter belt would be of benefit to the farmer, as the wind is now one of the chief agents in scattering noxious weed seeds.

Shelter belts would also furnish a considerable amount of wood. Four acres of a plantation on each quarter section would furnish sufficient fuel for domestic use on the farm apart from the coal required for heavy firing in the coldest winter weather and also sufficient fence posts for farm use.

I need not say that a treed country is much more beautiful than the bare prairie. We learn in time to love even the monotony of our prairie homes but we must confess that the shelter belt adds much to the beauty of the landscape.

I have been nearly a generation on the prairie and there has been a great change in the matter of the watering of the prairie in that generation—a change much for the worse. We used to have pools of water and streams everywhere, and it was easy to get a well of water. The sloughs retained water thruout the summer, the grass grew luxuriantly around them and the air was moist. We have drained the land everywhere, have cultivated the

fields, and there are furrows in every field leading into the drains. The result is that the winds carry away the moisture from our tilled soil. In the spring the snow melts, the furrows and the drains carry the water into the creeks, the creeks carry it into the rivers, and the country is arid. The air is dry, the soil is parched and there is no water to be found in our streams. The remedy for this is the tree and it is a complete remedy. And there is no other remedy. If it were only the surface of the ground and what is above it that is parched it would not be so bad, but even the springs under the ground are dried up. Conditions are growing worse from year to year as they needs must for every year we are cultivating more ground, making more furrows,

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On the grounds of the Lethbridge Experimental Station. Here windbreaks have been grown and much remarkable beauty developed in landscape gardening in the most arid part of Western Canada. Irrigation was used in some extent but much was done under the driest conditions.

cooled in carrying off the moisture from the grain, and in passing thru the trees it is cooled very materially as the wind passes thru the leaves. Thousands of acres of crop are destroyed in Manitoba every year simply thru the wind blowing the seed bed away.

A treed country seldom has drought. The open country frequently suffers from drought. The rainfall increases within certain limits as the trees increase in number, and decreases as the trees decrease in number. The trees give out a substantial quantity of moisture to the air. The soil protected by the trees conserves moisture both from rainfall and snow and this is given out in the air. In many countries dry arid plains have been treed and the rainfall has increased and drought has been banished. Frosts are very often caused as a result of high winds. Sheltered places suffer less from frost than those in the open.

One of the greatest sources of loss to the farmers of Manitoba is the hail storm, and hail is largely a development of culture of the ground in the open. The heat of the ground warms the air and causes an upward current. The warm air passes upward, carrying moisture with it till it reaches the colder strata above, when the moisture congeals and it falls as hail. This is borne out by the fact that there is an almost complete absence of hail in the wooded districts of Northern Manitoba and Saskatchewan. In these districts it is notorious that there is more rain and less hail than on the open prairie.

The snow drift is the worst enemy of winter travel in Manitoba and it is becoming worse as the country is becoming more generally cultivated. Winter

